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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/825,446

04/04/2001

Keishi Nakamura

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11/14/2003

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EXAMINER

EASTHOM, KARL D

ART UNIT

PAPER NUMBER

2832

DATE MAILED: 11/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/825,446

Applicant(s)

NAKAMURA ET AL.

Examiner

Karl D Easthom

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(s).

Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 21, 23-28, 31-37 and 39-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 21, 23-28, 31-37, and 39-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 24-28, 31-35, and 40-44 are rejected under 35 U.S.C. 103 as being obvious over Smekjkal in view of Person et al. '083. Smekjkal discloses at Fig. 7A (metal strip electrodes 30, with resistor 28), the claimed invention except the thickness, and perhaps the straight path and fused solder only on the electrodes. The diffusion layer is created by the cladding process disclosed at col. 3, lines 3-12, where the joining by the high pressure necessarily results in diffusion else the materials would not be joined. Person discloses the claimed thickness at col. 4, lines 3-27 for the purpose of obtaining the desired resistance and strength, so that it would have been obvious to employ that thickness. Person discloses no cutting as an option at col. 5, lines 40-45 indicating the resistors can be solid or cut, the latter in order to obtain the desired resistance. Similarly, Smekjkal suggests trimming is performed only if the desired resistance is not high enough, such that it would have been obvious to employ a noncut resistor is disclosed where any desired resistance is desired, see Smekjkal at col. 3, lines 43-55, where "each body is adjusted to its desired resistance value". That is, if the resistance value in the uncut resistor is desired, it is not adjusted. This meets the straight path for claims 36 and 56 and like claims claim 1 at Figs. 5-6 or 11-12 with electrodes 14,16. For the insulation, Smekjkal discloses it stating "encapsulation material 62 is applied to the exposed front and rear surfaces and edges of the resistive strip 28" - col. 3, lines 55-65. For the solder, Smekjkal

indicates at cols. 3-4, lines 55-10, that solder 66 is only on the electrode surfaces because Smelka discloses covering all exposed portions of the resistor 28 with the encapsulation 62 as just noted, and then employing solder, and thus with only the electrodes exposed, this process would leave solder only on each surface of the electrodes 66. This is similar to the Fig. 10 embodiment of Person showing only the electrodes exposed, which would have been obvious so as to protect the resistor. For claim 33, the electrodes 30, and 32 are flat. Also, electrodes 50 of Person at Fig. 12 comprise flat parts at top after bonding. Or electrodes 70,74 are flat at Fig. 15. The bonding electrodes for claims 33-34 are disclosed at Fig. 6 of Person (as 14, 16 on both sides), or Figs. 16-17 (68-74 also on both sides), so that it would have been obvious to employ electrodes on each side so that the resistor is symmetrical and can be mounted from any direction. There are three flat portions. For claim 35, the electrodes of Person are nickel and it would have been obvious to employ a known metal for another to provide a good conductor. The bonding location of claim 34 is anywhere on the top electrode. For claims 26 and 42, copper is disclosed for electrodes 30,32 of Smejkal. For claims 24 and 40, the thicknesses appear about equal in Fig. 7A and it would have been obvious to employ the claimed where the device is described as having double thickness at the electrodes, see claim 8 of Smejkal et al. Also, in Person at col. 4, lines 3-40, the relative electrode to resistor thickness is described as "substantially less", suggesting the claimed ranges. For claims 27 and 43, copper or nickel and the materials of Person have the claimed relative conductivities where it would have been obvious to make the resistor lower in conductivity than the conductor, else it would not be called a resistor. For claims 28 and 44, Person discloses that the thickness of 1-8 mils is varied, thus adjusting the resistance, at col. 4, lines 1-25, ranges from 25-200um, so that it would have

been obvious to employ such a method for the purpose noted of adjusting resistance. For claim 25 and 41, EVANOHM of Person at col. 2 meets the claims, which is disclosed as a good foil material having a desired resistance and TCR so that such a material would have been obvious for that purpose where any resistive strip is disclosed by Smejkal. For claims 31-32, epoxy is disclosed at Smejkal col. 1 by way of incorporation of Rainer, disclosing epoxy as a good insulation material for resistors such as Person and Smejkal.

3. Claims 21, 23, 36-37, 39 are rejected under 35 U.S.C. 103(a) as obvious over Smejkal et al. with Person '083, in view of Shindy et al. Person or Smejkal disclose the claimed invention as noted above, except the solder thickness, the material. Shindy et al. discloses a fused solder layer 7 in the claimed thickness at col. 3, lines 31-46 for the purpose of making a uniform solder layer of increased reliability due to a smoother surface that holds less contaminants, such that it would have been obvious to render such a thickness where solder is disclosed by Smejkal. The solder is "fused" where it is melted. In claims 21 and 46, the tin solder at col. 4, lines 55-60 meets the claim.

4. Claims 21, 23, 36-37, and 39 are rejected under 35 U.S.C. 103(a) as obvious over Smejkal et al. or Person '083 in view of Takeuchi et al. Smejkal or Person disclose the claimed invention, as noted above, except the solder and electrode thickness. That thickness is disclosed as standard in the art for a surface mounted chip resistor at col. 9, lines 30-33 for mounting thereof such that it would have been obvious to form the claimed thickness for the layers of Smejkal et al. whereat a surface mounted chip resistor is also disclosed for mounting. For claim 27, and like claims, the noted materials have the claimed resistivity inherently.

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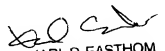
1. Applicant's arguments filed 9/15/03 with respect to the claims have been considered but are moot in view of the new ground(s) of rejection, or are addressed next. Applicant argues that the whole body is not covered by insulation in Smejkal. This is not correct as noted above. That is, while Fig. 7a does not disclose it, Smejkal discloses it elsewhere by stating "encapsulation material 62 is applied to the exposed front and rear surfaces and edges of the resistive strip 28" – col. 3, lines 55-65. For the solder, it would then only be on the exposed face. All other arguments are persuasive and those rejections pertaining thereto are dropped. As to the body not having flat tetragonal electrodes, this is not correct, where Smejkal has same, and even the Person electrodes are flat, there are three flat portions all joined. These are the bonding electrodes.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl Easthom whose telephone number is (703)308-3306. The examiner can normally be reached on M-Th. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad, can be reached on (703)308-7619. The fax phone number for the organization where this application or proceeding is assigned is (703)308-7722. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.


KARL D. EASTHOM
PRIMARY EXAMINER